



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,937	01/25/2002	Yoichi Akagami	218435US2	6946

22850 7590 02/18/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
----------	--------------

3723

DATE MAILED: 02/18/2004

2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,937

Applicant(s)

AKAGAMI ET AL.

Examiner

Hadi Shakeri

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-15,17-20 and 22 is/are rejected.
- 7) ☒ Claim(s) 8,16 and 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION***Claim Rejections - 35 USC § 102***

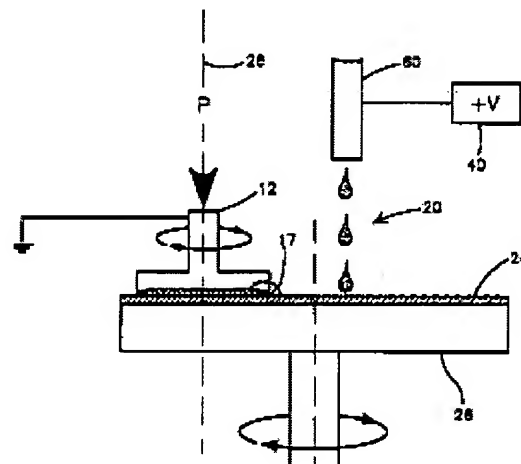
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 17-19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Glass.

Glass discloses all the limitations of claims 1 and 17, i.e., a polishing apparatus comprising an electrode comprising, e.g., two sets of ring-shaped electrodes positioned on the holder (12), col. 7, lines 63-67, slurry comprising abrasives and a carrier liquid between the electrode and the workpiece, and application of AC-voltage to the electrodes. Regarding not applying the voltage to the workpiece, Glass discloses in col. 6, lines 33-43 that any configuration may be used, e.g., the electrodes may be attached to holder and or the platen, thus embodiments wherein the electrodes are attached to the platen and/or platen and the slurry dispensing device would read on the limitations.



Regarding claims 2, 3, 4 and 4, Glass meets the limitations, i.e., electrode elements having different diameters concentric circular formation and different voltages applied to the electrodes.

Regarding claims 9-15 and 22, Glass disclosed providing electrodes to the dispensing unit and that the unit may include an electro spraying device, which inherently require for the pipe to be insulative.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-7, 9-15, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glass.

Glass meets all the limitations of claims 5-7 and 20, including applying different electrical potential at the center region that is different than the electrical potential at the periphery (col. 7, lines 37-45), except for disclosing applying a lower voltage to the inner or central electrode and higher voltage to the outer. Glass discloses controlling the planarization by applying different potential differences at different portions. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to apply lower voltage to the inner and higher voltage to the outer electrode to control the polishing, e.g., preventing dishing effect.

Regarding claims 9-15 and 21, Glass meets all the limitations including providing electrodes around the dispensing device, except for disclosing the dispensing device to be insulative, even though inherent, alternatively, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to make the pipe insulative for safety and to prevent electric shock.

5. Claims 1-7, 9-15, 17-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Glass.

As admitted by the Applicant, e.g., Figs. 12 and 13, polishing apparatus comprising electrode meeting all the limitations of claim 1, except for the electrode to comprise a plurality of

Art Unit: 3723

elements, and to be only applied to the processing tool instead of the tool and the workpiece and/or workpiece carrier. Glass teaches controlling the planarization by applying different potential differences at different portions using electrodes comprising two rings and also teaches that the electrodes may have different configurations and may be applied only to workpiece carrier, processing tool and/or both. It would have been obvious to one of ordinary skill in the art, at the time the invention was made to modify the invention of AAPA with the electrodes comprising two rings and configurations as taught by Glass to control the rate of planarization of portions of wafer through varied potential differences. Regarding claims 5-7 and 2, AAPA in view of Glass further modified as in section 4 above meets the limitations.

Allowable Subject Matter

6. Claims 8, 16 and 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: a cylindrical electrode having a film shaped conductor and an insulative layer that are wound around a spindle, places the indicated claims in condition for allowance.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3723

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

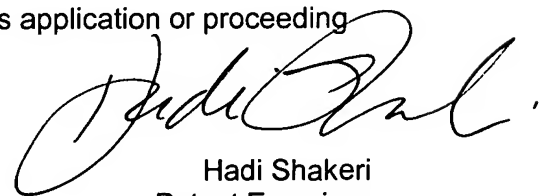
9. Applicant's arguments filed 11/17/03 have been fully considered but they are not persuasive. Glass in embodiments as disclosed in column 6, e.g., wherein the electrodes are applied only to the platen and/or platen and the dispensing liquid would apply charges to the processing abrasive particles without having to ground the system through the workpiece, which may be utilized, as indicated by Glass, to a silicon wafer, i.e., non-metallic or non-conductive materials. With regards to the AAPA, apparatus as disclosed by Figs. 11 and 12 further modified by the teaching of Glass as indicated above meets all the limitations as recited. It is also noted that since claim 1 was not amended per previously indicated allowable subject matter of claim 9, the rejections as set forth in this Office Action is made final.

Conclusion

10. Prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Nakamura, Ohmori et al., Ohmori, Kishii et al., Mattingly et al., Dow and Kojima et al. are cited to show related inventions.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM. All official documents may be faxed to (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.



Hadi Shakeri
Patent Examiner
February 13, 2004